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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/760,339	01/20/2004	Hari Babu Sunkara	CL1483 US CNT	9809

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E. I. du Pont de Nemours & Company  
Legal - Patent  
1007 Market Street  
Wilmington, DE 19894

EXAMINER
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KEYS, ROSALYND ANN

ART UNIT	PAPER NUMBER
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1621

DATE MAILED: 02/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/760,339

Applicant(s)

SUNKARA ET AL.

Examiner

Rosalynd Keys

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,20-24 and 46-95 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,20-24,46-71 and 78-95 is/are rejected.
- 7) ☒ Claim(s) 72-77 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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**DETAILED ACTION**

***Status of Claims***

1. Claims 1, 20-24 and 46-95 are pending.  
Claims 1, 20-24, 46-71 and 78-95 are rejected.  
Claims 72-77 are objected.  
Claims 2-19 and 25-45 are cancelled.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 46 is rejected under 35 U.S.C. 102(b) as being anticipated by Nishihira et al. (US 5,731,453).

Nishihira et al. disclose preparation of a dialkyl oxalate in two stages wherein the by-product alkyl phenol is removed in both stages (see entire disclosure, in particular column 4, lines 19-32). The by-product is gaseous (see column 6, lines 26-38). The reaction is a liquid phase reaction (see for example column 6, lines 34-38).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

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would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claims 1, 20-24, 47-63, 66-71, and 78-95 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 2,520,733) in view of Wagner et al. (WO 98/37123, which is equivalent to US 6,187,898 B1).

The instant claims are mainly directed to a process for making polytrimethylene ether glycol comprising continuously providing 1,3-propanediol reactant and polycondensation catalyst; and continuously polycondensing the 1,3-propanediol reactant to polytrimethylene ether glycol in a reactor having two or more reaction stages.

Morris et al. teach preparation of polymers and copolymers of trimethylene glycol by polycondensation of trimethylene glycol in the presence of dehydration catalysts, which include both inorganic and organic acids (see column 1, line 1 to column 6, line 22). The reaction temperature ranges from about 150°C to about 300°C (see column 6, lines 1-13). Water is removed under sub atmospheric pressure (see column 6, lines 54-60).

Morris et al. differ from the instant claims in that the process of Morris et al. is a batch process whereas the instant claims are directed to a continuous process. However, it is well established that batch and continuous processes are not patentably distinct. because it is well within the expected skill of the artisan to operate a batch process continuously. See In re Dilnot, 319 F.2d 188, 138 U.S.P.Q. 248 (C.C.P.A. 1963).

Morris et al. further differ from the instant claims in that Morris et al. fail to teach the use of a reactor having two or more reaction stages.

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Wagner et al. teach a method for polycondensation of a monomeric starting material wherein the reactor has at least two stages (see column 1, lines 5-52 and column 2, line 52 to column 3, line 9). Suitable pre-reactors include those suitable for heat exchange and include a mixing vessel with specific stirrer geometry for viscous products (see column 3, lines 1-34). The high viscosity reactor also includes a heat supply (see column 3, lines 30-34). Suitable condensable monomers include polyols (see column 4, lines 20-35). The temperature ranges from 100 to 250°C and the pressure ranges from 0.01 to 100 bar, i.e., 7.5 to 75006 mm Hg, (see column 5, lines 31-45). The method of Wagner et al. allows one to obtain polycondensation products of significantly improved product quality (see column 2, lines 52-61). Wagner et al. teach that the evaporated low-molecular weight elimination products may either be drawn off in the pre-reactor, downstream of the pre-reactor, in the high-viscosity reactor, or with the product.

One having ordinary skill in the art at the time the invention was made would have been motivated to carry out the process of Morris et al. in a reactor having at least two reaction stages in order to significantly improved the product quality.

The reactor of Wagner et al. does not include multiple feed locations. However, the ordinary skilled artisan would have found it obvious to include multiple feed locations in order to maintain a consistent concentration of the 1,3-propane diol reactant.

### ***Double Patenting***

7. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

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A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

8. Claim 64 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 19 and 20 of prior U.S. Patent No. 6,720,459 B2. This is a double patenting rejection.

***Allowable Subject Matter***

9. Claims 72-77 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: Although the prior art teaches the use of a pre-reactor and a high viscosity reactor, it does not teach or fairly suggest carrying out the claimed polycondensation reactor using a prepolymerizer followed by a column reactor .

***Response to Amendment***

11. The rejection of claims 1 and 20-24 under 35 U.S.C. 103(a) as being unpatentable over Morris et al. (US 2,520,733) alone or in view of Kilpatrick (US 3,526,484) is withdrawn due to the amendment to claim 1, filed November 15, 2004.

12. The rejection of claims 1 and 20-22 under 35 U.S.C. 103(a) as being unpatentable over Mason et al. (US 3,326,985) in view of Kilpatrick (US 3,526,484) is withdrawn due to the amendment to claim 1, filed November 15, 2004.

13. The rejection of claims 1 and 20-24 under 35 U.S.C. 103(a) as being unpatentable over Sunkara et al. (US 6,235,948) in view of Kilpatrick (US 3,526,484) is withdrawn due to the amendment to claim 1, filed November 15, 2004.

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14. The rejection of claim 46 under 35 U.S.C. 103(a) as being unpatentable over Brill et al. (US 3,192,184) in view of Lohe et al. (US 5,814,282) is withdrawn because Brill teach a downflow reactor and the amended claim requires the reactor to have two or more stages.

***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

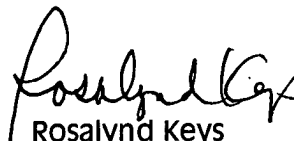
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalynd Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, R and F 3:00-8:00 pm and T-W 5:30-10:30 am.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Rosalyn Keys  
Primary Examiner  
Art Unit 1621

February 3, 2005